

WHAT IS CLAIMED AS NEW AND IS DESIRED TO BE SECURED BY LETTERS
PATENT OF THE UNITED STATES IS:

1. A radio communication processing unit which handles communication processing
between each of mobile terminals and a host server connected to a network, with each of said
5 plurality of mobile terminals being connected to at least one base station radio unit within a
communication area of said base station radio unit connected thereto and existing within a
radio communication network system in which a communication is established by wireless
radio between said mobile terminals and said host server in a state where said base station
radio unit intervenes therebetween, said radio communication processing unit comprising:

10 storage means for storing at least communication frequencies being used in all base
station radio units existing within said radio communication network system;

frequency setting means for determining, on the basis of the contents stored in said
storage means, a communication frequency for use in said base station radio unit connected
to its own self to set the determined communication frequency in said base station radio unit;

15 reporting means for reporting channel information including information indicative of
said base station radio unit connected to its own self and information indicative of said
communication frequency being currently in use in said base station radio unit through said
network system to each of different radio communication processing units; and

20 storage editing means for updating the contents stored in said storage means on the
basis of said channel information given from said reporting means of said different radio
communication processing unit.

2. The radio communication processing unit according to claim 1, further comprising
channel information requesting means for, when there arises a need to set or change a
communication frequency to be used in said base station radio unit connected to its own self,
25 outputting a channel information requesting signal to make a request for transmission of

channel information on said base station radio unit connected to each of said different radio communication processing units, to all said different radio communication processing units,

when receiving said channel information requesting signal from said channel

information requesting means of said different radio communication processing unit, said

5 reporting means referring to the contents of said storage means for transmitting said channel information on said base station radio unit connected to its own self to said channel

information requesting signal issuing radio communication processing unit, and further said

frequency setting means determining a communication frequency to be used in said base

station radio unit connected to its own self, on the basis of the contents of said storage means

10 updated in said storage editing means in accordance with each of said channel information

transmitted from all said different radio communication processing units in response to a

request from its own channel information request means.

3. The radio communication processing unit according to claim 1, wherein, when there arises a need to set or change a communication frequency to be used in said base station
15 radio unit connected to its own self, said frequency setting means determines a communication frequency, to be used in said base station radio unit connected to its own self, on the basis of the contents stored in said storage means,

while said reporting means reports information on said channel information, determined by said frequency setting means, to be used in said base station radio unit
20 connected to its own self to all said different radio communication processing units.

4. The radio communication processing unit according to claim 1, wherein, when determining a communication frequency to be used in said base station radio unit connected to its own self, said frequency setting means makes a frequency determination on a first condition that, of a plurality of predetermined communication frequencies, a communication

frequency which is not being put to use in said base station radio unit existing on the periphery of said base station radio unit being a determined communication frequency using unit is determined as said communication frequency to be used therein,

if there exist a plurality of communication frequencies falling under said first condition, said frequency setting means makes a frequency determination on a second condition that a communication frequency which does not cause interference due to inter-modulation is determined as said communication frequency to be used therein considering frequencies being used in said peripheral base station radio unit and in said base station radio unit existing on the periphery of said peripheral base station radio unit, and

if there exist a plurality of communication frequencies falling under said second condition or if there exist a plurality of frequencies falling under said first condition but not falling under said second condition, said frequency setting means determines the highest communication frequency of said plurality of channels as said communication frequency to be used therein.

5. The radio communication processing unit according to claim 2, wherein, when determining a communication frequency to be used in said base station radio unit connected to its own self, said frequency setting means makes a frequency determination on a first condition that, of a plurality of predetermined communication frequencies, a communication frequency which is not being put to use in said base station radio unit existing on the periphery of said base station radio unit being a determined communication frequency using unit is determined as said communication frequency to be used therein,

if there exist a plurality of communication frequencies falling under said first condition, said frequency setting means makes a frequency determination on a second condition that a communication frequency which does not cause interference due to inter-

modulation is determined as said communication frequency to be used therein considering frequencies being used in said peripheral base station radio unit and in said base station radio unit existing on the periphery of said peripheral base station radio unit, and

if there exist a plurality of communication frequencies falling under said second condition or if there exist a plurality of frequencies falling under said first condition but not falling under said second condition, said frequency setting means determines the highest communication frequency of said plurality of channels as said communication frequency to be used therein.

6. The radio communication processing unit according to claim 3, wherein, when determining a communication frequency to be used in said base station radio unit connected to its own self, said frequency setting means makes a frequency determination on a first condition that, of a plurality of predetermined communication frequencies, a communication frequency which is not being put to use in said base station radio unit existing on the periphery of said base station radio unit being a determined communication frequency using unit is determined as said communication frequency to be used therein,

if there exist a plurality of communication frequencies falling under said first condition, said frequency setting means makes a frequency determination on a second condition that a communication frequency which does not cause interference due to inter-modulation is determined as said communication frequency to be used therein considering frequencies being used in said peripheral base station radio unit and in said base station radio unit existing on the periphery of said peripheral base station radio unit, and

if there exist a plurality of communication frequencies falling under said second condition or if there exist a plurality of frequencies falling under said first condition but not falling under said second condition, said frequency setting means determines the highest

communication frequency of said plurality of channels as said communication frequency to be used therein.

7. A computer-readable recording medium recording a radio communication processing program for handling communication processing between each of a plurality of mobile terminals and a host server connected to a network, with each of said plurality of mobile terminals being present within a radio communication network system in which a communication is made by wireless radio between each of said mobile terminals and said host server in a state where base station radio units intervenes therebetween, and with said radio communication processing program being run by a communication processing computer connected to at least one base station radio unit, and even with each of said mobile terminals existing in a communication area of said base station radio unit connected to said communication processing computer, said radio communication program making said communication processing computer fulfill functions of:

storing, in storage means, at least communication frequencies being used in all said base station radio units existing within said radio communication network system;

determining, on the basis of the contents stored in said storage means, a communication frequency for use in said base station radio unit connected to its own unit to set the determined communication frequency in said base station radio unit;

reporting channel information including information indicative of said base station radio unit connected to its own unit and information indicative of a communication frequency being currently in use in said base station radio unit connected thereto through said network to a different radio communication processing unit; and

updating the contents stored in said storage means on the basis of the channel information given from reporting means of said different radio communication processing unit.